

REMARKS/ARGUMENTS

Favorable reconsideration of this application in view of the above amendment and following remarks is respectfully requested.

Claims 2-9, 11, 14, 15, and 18-32 are pending. In the present amendment, Claims 2-9, 11, 14, 15, and 18-20 are currently amended, Claims 1, 10, 12, 13, 16, and 17 are canceled without prejudice or disclaimer, and new Claims 21-32 are added. Support for the present amendment can be found in the original specification, for example, in original Claims 2-9, 11, 14, 15, and 18. Thus, Applicant respectfully submits that no new matter is added.

In the outstanding Office Action, Claims 1-18 were rejected under 35 U.S.C. § 102(a) as anticipated by the Model RA-4000 publication (hereinafter "Model"); Claims 1-12, 14, 15, 17, and 18 were rejected under 35 U.S.C. § 102(a) as anticipated by the German '249 publication (hereinafter "German"); Claims 1-7, 10, and 11 were rejected under 35 U.S.C. § 102(b) as anticipated by Parham (U.S. Patent No. 4,996,757); Claims 19 and 20 were rejected under 35 U.S.C. § 103(a) as unpatentable over Model; Claims 13, 16, 19, and 20 were rejected under 35 U.S.C. § 103(a) as unpatentable over German; and Claims 12-16, 19, and 20 were rejected under 35 U.S.C. § 103(a) as unpatentable over Parham.

Initially, it is noted that, in the copy of the Form PTO-1449 filed May 9, 2006, included with the outstanding Office Action, reference AW (Press Release, "Model RA-4000") was not initialed. Thus, it is respectfully requested that a fully initialed copy of this form be provided with the next Office communication.

In response to the rejections under 35 U.S.C. § 102(a) and 35 U.S.C. § 102(b), it is noted that independent Claim 1 is hereby canceled without prejudice or disclaimer. Accordingly, the rejection of Claim 1 is moot. Further, Claims 2-9, 11, 14, 15, and 18 are amended to depend on Claim 19. Accordingly, the rejections of Claims 2-9, 11, 14, 15, and 18 will be discussed under the rejections of Claim 19

Turning now to the rejections under 35 U.S.C. § 103(a), Applicant respectfully requests reconsideration of these rejections and traverses these rejections, as discussed below.

Amended Claim 19 recites:

A roll crusher assembly for use in the mining industry, comprising:

one or more than one roll for crushing a feed material, the roll or rolls comprising an outer surface formed from a wear resistant material;

a means for depositing a hard facing material onto the surface of the roll or rolls as the roll or rolls rotate during a crushing operation; and

a means for monitoring the surface of the roll or rolls comprising a laser optical continuous monitoring means that includes a laser system mounted on a frame arranged to minimize vibrations.

As stated in the original specification, for example, at page 5, lines 29-34, one roll surface monitoring means that is currently favored is a laser optical continuous monitoring means that includes a laser system mounted on a specially designed frame arranged to minimize vibrations which, if uncontrolled, could prevent accurate measurement of the extent of wear on the surface of the roll or rolls. Applicant respectfully submits that the cited references do not disclose or suggest every feature recited in amended Claim 19.

Model describes an automated system for arcing of sugar mill crusher rolls.¹ The system “can be used for straight line welding and roll rebuilding in workshop as well as arcing during crushing.”² An open arc type welding torch is provided that requires no shielding gas and no water cooling.³

However, Applicant respectfully submits that Model does not disclose or suggest “a means for monitoring the surface of the roll or rolls comprising a laser optical continuous

¹ See Model, at page 1.

² See Model, at page 3.

³ See Model, at page 5.

monitoring means that includes a laser system mounted on a frame arranged to minimize vibrations,” as recited in amended Claim 19.

Instead, Model is silent with respect to a means for monitoring the surface of the roll or rolls. Further, the Office Action does not state that Model describes this claim feature, but instead, takes the position that “the limitations of these claims would have been obvious design choices only once the basic process and apparatus was known. For example, the use of optical monitoring means is well known in the welding repair art and of no patentable merit.” However, the Office Action provides no rationale for why Model expressly, impliedly, or inherently possesses this feature. Although the Office Action states that the use of optical monitoring means is well known in the art, the Office Action has provided no evidence to support this assertion.

Additionally, MPEP § 706.02(j) states “To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.”⁴

The Examiner also has not taken Official Notice of the “laser optical continuous monitoring means” recited in Claim 19. MPEP § 2144.03 states “Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.” Applicant respectfully submits that a laser optical continuous monitoring means would not be capable of instant and unquestionable demonstration as being well-known by a person having ordinary skill in the art.

⁴ Citing Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

Therefore, Applicant respectfully submits that Model does not disclose or suggest every feature recited in amended Claim 19. Further, the Office Action has not demonstrated a *prima facie* case of obviousness with respect to Model. Thus, it is respectfully requested that the rejection of Claim 19, and all claims dependent thereon, as unpatentable over Model be withdrawn.

German describes a method and apparatus for electrospray deposition of metal onto the work surface of rollers. Voltage is applied from a power source to the roller, whereby metal is deposited onto the work surface of the rollers during their operation by the application of current and voltage.⁵ German discloses in Claim 2 that the rate of wear of the work surface of the rollers is determined through measurement of the wear of the rollers at certain *intervals*.

However, Applicant respectfully submits that German does not disclose or suggest “a means for monitoring the surface of the roll or rolls comprising a laser optical continuous monitoring means that includes a laser system mounted on a frame arranged to minimize vibrations,” as recited in amended Claim 19.

Instead, German describes monitoring wear through measurement of the work surface at certain intervals.⁶ The Office Action does not disclose or suggest why a person having ordinary skill in the art would prefer measurement of wear at certain intervals as disclosed in German over continuous monitoring with a laser system mounted on a frame arranged to minimize vibrations, as described in Claim 19. Instead, the Office Action states “the limitations of these claims would have been obvious design choices only once the basic process and apparatus was known. For example, the use of optical monitoring means is well known in the welding repair art and of no patentable merit.” However, the Office Action provides no rationale for why German expressly, impliedly, or inherently possesses this

⁵ See German, at Claim 1.

⁶ See German, at Claim 1.

feature. Although the Office Action states that the use of optical monitoring means is well known in the art, the Office Action has provided no evidence to support this assertion. The Examiner also has not taken Official Notice of the “laser optical continuous monitoring means” recited in Claim 19.

Accordingly, Applicant respectfully submits that German does not disclose or suggest every feature recited in amended Claim 19. Further, the Office Action has not demonstrated a *prima facie* case of obviousness with respect to German. Thus, it is respectfully requested that the rejection of Claim 19, and all claims dependent thereon, as unpatentable over German be withdrawn.

Parham describes a one-piece roller assembly fabricated from a single casting of a steel that is less hard than steel normally used for the tires in existing devices.⁷ The less hard steel allows the roller to be rebuilt when the rolling surface wears out by applying a hard surface of steel weld beads.⁸ Parham discloses that filling of a wear pattern with weld beads can be checked *periodically* during the welding procedure using a simple jig with a template of the desired roller assembly outside shape.⁹

However, Applicant respectfully submits that Parham does not disclose or suggest “a means for monitoring the surface of the roll or rolls comprising a laser optical continuous monitoring means that includes a laser system mounted on a frame arranged to minimize vibrations,” as recited in amended Claim 19.

Instead, Parham describes checking wear through measurement of the roller surface *periodically*.¹⁰ The Office Action does not disclose or suggest why a person having ordinary skill in the art would prefer measurement of wear periodically as disclosed in Parham over continuous monitoring with a laser system mounted on a frame arranged to minimize

⁷ See Parham, at Col. 2, lines 21-25.

⁸ See Parham, at Col. 2, lines 25-27.

⁹ See Parham, at Col. 4, lines 45-50.

¹⁰ See Parham, at Col. 4, lines 45-50.

vibrations, as described in Claim 19. Instead, the Office Action states “the limitations of these claims would have been obvious design choices only once the basic process and apparatus was known. For example, the use of optical monitoring means is well known in the welding repair art and of no patentable merit.” However, the Office Action provides no rationale for why Parham expressly, impliedly, or inherently possesses this feature. Although the Office Action states that the use of optical monitoring means is well known in the art, the Office Action has provided no evidence to support this assertion. The Examiner also has not taken Official Notice of the “laser optical continuous monitoring means” recited in Claim 19.

Accordingly, Applicant respectfully submits that Parham does not disclose or suggest every feature recited in amended Claim 19. Further, the Office Action has not demonstrated a *prima facie* case of obviousness with respect to Parham. Thus, it is respectfully requested that the rejection of Claim 19, and all claims dependent thereon, as unpatentable over Parham be withdrawn.

Amended Claim 20 recites:

A roll crusher assembly for use in the mining industry,
comprising:

one or more than one roll for crushing a feed material, the roll
or rolls comprising an outer surface formed from a wear resistant
material;

a means for depositing a hard facing material onto the surface
of the roll or rolls as the roll or rolls rotate during a crushing operation;
and

a means for heat treating the deposited hard facing material on
the rotating roll or rolls downstream of the hard facing material
deposition means in a direction of rotation of the roll or rolls.

As stated in the original specification at page 6, lines 22-24, the heat treatment means is required to increase the toughness of the hard facing materials that tend to form brittle deposits on the rolls. Applicant respectfully submits that the cited references do not disclose or suggest every feature recited in amended Claim 20.

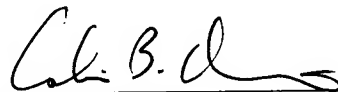
Model, German, and Parham are silent with to heat treatment of deposited hard facing material. As discussed above with respect to Claim 19, the Office Action provides no rationale for why Model, German, and Parham expressly, impliedly, or inherently possess this feature of amended Claim 20. Accordingly, it is respectfully requested that the rejection of Claim 20, and all claims dependent thereon, as unpatentable over Model, German, and Parham be withdrawn.

New Claims 21-32 are added by the present amendment. Support for new Claims 21-32 can be found in the original specification, for example, in original Claims 2-9, 11, 14, 15, and 18. Thus, Applicant respectfully submits that no new matter is added. It is noted that new Claims 21-32 are dependent on independent Claim 20. Accordingly, Applicant respectfully submits that new Claims 21-32 patentably define over the cited references for at least the reasons discussed above with respect to Claim 20.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

Respectfully submitted,

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